



## ● Case Study

# PET Processors (UK)

### Fact File

<b>Date:</b>	June 9 <sup>th</sup> 2009
<b>Location:</b>	PET Processors (UK), Dumfries, Scotland
<b>Product:</b>	PAS 420 Audiosonic Acoustic Cleaner
<b>Principle:</b>	Primasonics® International Limited (UK)
<b>Problem:</b>	Cross Product Contamination at Silo Discharge

### Client Background

PET is a privately owned by Diefenthal Investments and have their corporate centre in Cleveland Ohio. The Scottish plant commenced commercial production of SSP Polymer in May 1996 and the plant was expanded in both size and capacity in January 2004. The company produce a range of Solid State Polymers by enhancing the crystallinity and molecular weight for semi-crystalline thermoplastics.

These various products are produced in pelleted form and stored within an eight tonne silo. Unfortunately cross contamination was occurring within the discharge cone section of the silo which resulted not only in loss of product but also loss of production due to having to manually clean the silo out between different product types. The most troublesome material was polyester pellets with a particle size of between 2 and 3mm and a moisture content of 100ppm. The material formed soft clumps which bridged over the silo outlet.

### The Approach

Alex Bergus, Primasonics® Director of Technology visited site to meet with the originator of the web site Application Questionnaire, Stuart Eckersley, Plant Engineer. Alex discussed the benefits that would be achieved by installing a Primasonics® Acoustic Cleaner just above the silo outlet. It would prevent any material from building up in this hopper area without causing any structural damage to the silo wall as can be the case with either vibrators or mechanical hammers.

Safe, automated, effective prevention and removal of dry powder, particulate build up and blockages.

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#### The Solution

PRIMASONICS® supplied an Acoustic Cleaner Model PAS-420 complete with External Mounting Tube and other accessories. A small hole was cut on the side of the hopper discharge and the mounting tube welded in place. The PAS-420 Acoustic Cleaner was bolted to the flanged end of the mounting tube and the accessory items put in place. The Acoustic Cleaner was powered via a solenoid/timer by compressed nitrogen to avoid oxygen contaminating the product which activated the titanium diaphragm to create the correct sound frequency. The timer was set to sound the Acoustic Cleaner for a few seconds only at periodic intervals but only during either filling or discharging from the silo.

#### The Result

The positive effect of sounding the Acoustic Cleaner was immediate with total emptying of the silo on every occasion. Material build up was eliminated and therefore also was the serious previous problem of product cross contamination. Stuart Eckersley, Plant Engineer is now a very happy man and the savings in terms of both downtime and product losses have more than paid for the PRIMASONICS® Acoustic Cleaner.



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